

NOVEMBER 1893



OUT OF DOORS FOR WOMEN

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PLANTARUM PHANEROGAMARUM NOMINA ET SYNONIMA
OMNIUM GENERUM ET SPECIERUM A LINNAEO USQUE
AD ANNUM MDCCCLXXXV COMPLECTENS NOMINE
RECEPTO AUCTORE PATRIA UNICUIQUE
PLANTAE SUBJECTIS

SUMPTIBUS

BEATI CAROLI ROBERTI DARWIN

DUCTU ET CONSILIO

JOSEPHI D. HOOKER

CONFECIT

B. D. JACKSON

The printing of Part II is well advanced, and the completion of the whole work may be expected during 1894.

The following communication from SIR JOSEPH HOOKER, F.R.S., etc., etc., explains the origin, plan and purpose of this important and comprehensive undertaking:

"SHORTLY before his death Mr. Darwin informed me of his intention to devote a considerable sum in aid or furtherance of some work of utility to biological science; and to provide for its completion, should this not be accomplished during his lifetime. He also informed me that the difficulties he had experienced in accurately designating the many plants which he had studied, and ascertaining their native countries, had suggested to him the compilation of an INDEX TO THE NAMES AND AUTHORITIES OF ALL KNOWN FLOWERING PLANTS AND THEIR COUNTRIES, as a work of supreme importance to students of systematic and geographical botany and to horticulturists, as a fitting object of the fulfilment of his intentions

"I have only to add that, at his request, I undertook to direct and supervise such a work; and that it is being carried out at the herbarium of the royal gardens, Kew, with the aid of the staff of that establishment."

JOS. D. HOOKER.

London: Henry Froude, Clarendon Press Warehouse, Amen Corner, E.C.

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OUT OF DOORS FOR WOMEN

VOLUME I

NOVEMBER 1893

NUMBER 1

WOMEN OUT OF DOORS.

Woman's sphere in the last century has broadened greatly in what we are pleased to call civilized countries. She is no longer restricted to social and household duties, but is permitted to seek recreation or profit in any channel that is proper for man to engage in.

The field of journalism is filled with periodicals devoted to the interests of women in the home or office, but OUT OF DOORS FOR WOMEN appears in a province wholly unoccupied—almost untouched—by the periodicals of the day; yet, it is probably true that a greater number of women are today seeking out-of-door occupation than can be found thronging any other highway to profit and health.

Floriculture already engages the professional services of two thousand women in the United States; and when it is understood that of nearly five thousand commercial establishments in this country only three hundred and twelve are owned and managed by women, it will be seen that there is still room for more energetic women to engage in the business. There are thousands of other women devoting more or less time and attention to the cultivation of flowers for profit, who are almost blindly seeking information as to ways and means, and it is to these that our magazine is destined, we trust, to open a pathway to success.

The writer has been repeatedly surprised by queries from women who wished to add to their personal spending money, or

who sought to help their families in the struggle for existence. Few have been found to realize what such an undertaking requires, for success in growing a few roses does not imply ability to manage with profit an horticultural establishment. A woman engaging in floriculture needs to have a good business training; needs to study the requirements of her home market—if there is one; and to determine what she can most advantageously produce for a foreign market. This latter item can be arrived at only by experiment and after long and often costly experience; but while we would have no one think it an easy road to fortune, yet we would bid any one entering the field with a PURPOSE to be not easily discouraged, but to persevere and in time independence will be assured.

California—a land synonymous with health and sunshine—can probably boast of a greater number of successful women engaged in horticultural pursuits than any sister state. Mrs. Berger of San Francisco, Mrs. Shepherd of Ventura, and Miss Sessions of San Diego, form a trio often cited by writers for the press as shining examples of “what woman can do in horticulture.” Mrs. Nickels of Texas and the Brooks sisters of Florida are notable in like connection.

OUT OF DOORS FOR WOMEN, so suggestive in its name, is not to be restricted to floriculture, though its mission lies mainly in that direction; there are many other fields out of doors where woman can gain recreation and at the same time gain independence if not fortune. Travel invites the multitude, and with a lively pen and the aid of a camera many a woman can gain a competence. Science is a field in which many more women might engage with distinction to themselves. The coterie of ladies interested in shells, residing in the neighborhood of Los Angeles, is a proof of the truth of this—and one of the ladies is known to pay her expenses besides adding very materially to her chosen science. Mrs. Rosa S. Eigenmann is another representative of the Pacific coast in the domain of science.

OUT OF DOORS FOR WOMEN will thus welcome news from women out of doors the world over, whether from the traveller on foreign mountain tops, from forest or from garden, and her achievements, with either pick or pen, will be proudly chronicled.

NEW MEXICO, INCLUDING CALIFORNIA.

[A curious work of over a thousand pages, bearing the comprehensive title of "A New Geographical, Historical and Commercial Grammar; and Present State of the Several Kingdoms of the World," by William Guthrie, London, 1808, has come into the writer's possession. The account of California, it is thought, will be found a pleasing preface to our present knowledge of the "Golden State," and is reproduced in the following:]

SITUATION AND EXTENT.—Length 2000 miles, between the 94th and 126th degrees west longitude; breadth 1400 miles, between the 33d and 43d degrees north latitude; 600,000 square miles.

BOUNDARIES.—Bounded by unknown lands on the north; by Louisiana on the east; by Old Mexico and the Pacific Ocean on the south; and by the same ocean on the west.

DIVISIONS	SUBDIVISIONS	CHIEF TOWNS
Northeast division	New Mexico proper	{ Santa Fe, w. lon. 104, n. lat 36.
Southeast division	Apacheira	St. Antonio
South division	Sonora	Tuape
Western division	California, a peninsula	St. Juan

CLIMATE, SOIL.—These countries, lying for the most part within the temperate zone, have a climate in many places extremely agreeable, and a soil productive of everything either for profit or delight. In California, however, the heat is great in summer, particularly towards the sea coast; but in the inland country the climate is more temperate, and even cold.

FACE OF THE COUNTRY, PRODUCE.—The natural history of these countries is as yet in its infancy. The Spaniards themselves know little of them, and the little they know they are unwilling to communicate. It is certain, however, that in general the provinces of New Mexico and California are extremely beautiful and pleasant; the face of the country is agreeably varied with plains, intersected by rivers, and adorned with gentle

eminences covered with various kinds of trees, some producing excellent fruit. With respect to the value of the gold mines in these countries nothing positive can be asserted. Their natural productions are undoubtedly sufficient to render them advantageous colonies to any but the Spaniards. In California there falls in the morning a great quantity of dew, which, settling on the rose leaves, candies and becomes hard like manna, having all the sweetness of refined sugar without its whiteness. There is also another very singular production: in the heart of the country there are plains of salt, quite firm, and clear as crystal; which, considering the vast quantities of fish found on the coasts, might render it an invaluable acquisition to any industrious nation.

INHABITANTS, GOVERNMENT.—The Spanish settlements here are very weak; though they are increasing every day, in proportion as new mines are discovered. The inhabitants are chiefly Indians, whom the Spanish missionaries have in many places brought over to Christianity, to a civilized life, and to raise corn and wine, which they now export pretty largely to Old Mexico. The inhabitants and government here do not materially differ from those of Old Mexico.

HISTORY.—California was discovered by Cortez, the great conqueror of Mexico. Our famous navigator, Sir Francis Drake, took possession of it in 1578, and his right was confirmed by the principal king or chief in the whole country. This title, however, the government of Great Britain have not hitherto attempted to vindicate, though California is admirably situated for trade, and on its coast has a pearl fishery of great value.

IN BAJA CALIFORNIA.

By the Santa Maria I found myself the 27th of April, 1886. El Rosario mission, Baja California, was distant some eighty miles to the south, and the San Fernando mission still sixty miles beyond — and that was my ostensible objective point. A little sauzal (grove of willows) surrounded the rather dilapidated ranch buildings, situated twelve miles or so from the salt mines of San Quintin bay.

The Santa Maria valley was broad and sandy, covered with a dense, almost impenetrable growth of mock willows and

the graceful *Pluchea borealis*. A broad sandy arroyo led up to the foothills and thence into the very breast of the Sierra San Pedro de Martir (St. Peter the Martyr), which annually brought down tons of sand and gravel and boulders from that mysterious peak. Packing our blankets and some provisions on our horses, I and my assistant ventured into the narrow canyon, but found the intervening "three miles" a full dozen before we entered the defile.

For a mile or two we plodded through the deep sand, bounded on either hand by impregnable cliffs or barren, gravelly slopes, with only now and then a side oasis, or rather delta, where some side canyon contributed its quota of detritus. On these deltas we were pleased to find the beautiful blue palm (*Erythea armata*) thriving, loaded with clusters of its edible fruit — at that time hard and green.

One or two large clusters of the Californian, *Rhus laurina*, and of the Toyon or California Holly (*Heteromeles arbutifolia*) remind us of the typical Californian vegetation. Otherwise the prevailing plants were of the Sonoran or desert region, to which the palms properly belonged. The beautiful shrubby *Pentstemon Palmeri*, and various others of the desert flora, reminded me very strongly of the slopes of the Canyon Cantilles, on the eastern (gulf) side of these peninsular mountains.

Farther up this canyon we had been assured that we should find a different palm from any we had seen elsewhere, but our informant bore the distinction of being the greatest prevaricator in the country. We had already learned from experience of his ability in that direction and did not hesitate to return when we found our progress impeded by more and more threatening quicksands, over which a few inches of water quietly flowed to the ocean — the last of the winter rains.

Our return to the ranch house was even more difficult, as when we emerged from the canyon again there were no landmarks visible on the broad plain that bordered the sea and called by courtesy a valley. Roads there were none, but finally our horses led us by instinct aright and we found our botanical treasures safe in camp.

To the south of the Santa Maria the road followed the beach of the Pacific Ocean. A few plants grew in the sand dunes characteristic of the region. A new species of *Drymaria*, the

interesting *Nemacaulis nuttallii*, and the showy sand verbena (*Abronia*), were particularly worthy of notice.

About ten miles or so south of San Quintin bay we came to a most peculiar and strange "mountain" of sand — a hill a mile in width and some eight miles long, composed entirely of white drifting sand, at the highest part probably three hundred feet above the beach. How such a giant sand dune came to be formed at this spot is difficult to conceive. The surface was broken up into hillocks and peaks, sometimes surprisingly acute in outline, with steep walls of sand to windward. The surface, except at the edges, was devoid of every vestige of vegetation. A few grasses, identical with some collected on the Colorado desert, grew in the loose sand at the base of the mountain. While the surface of this mountain is constantly undergoing change in outline, yet the mountain itself does not change its position materially—at least, has not noticeably done so in the memory of the scattering settlers of the surrounding region of San Quintin bay.

Not far beyond this mountain of sand another canyon emptied into the sea, forming a small lagoon at the foot of the broken mesa lands. Here the Rosario road left the beach and followed over the rough mesas, with constant interruptions of deep ravines.

In the canyon near the lagoon a few depauperate sycamore trees obtained a precarious living, and a few stunted plants of *Washingtonia filifera* (the California fan palm) again reminded me even more strongly of desert regions—though, in fact, there was scarce anything to suggest other than the aridity of the country.

Coming suddenly upon a few heads of the semi-parasitic *Pholisma*, I was unpleasantly startled at its resemblance to a rattlesnake. By the way, scarcely a day passed in this entire region without the destruction of several of these poisonous reptiles.

This was the last water and feed before reaching Rosario mission, sixty miles away, and we consequently camped there over night. The coyotes made merry music for us, and but for a faithful watchdog we would have watched out the night to prevent the coyotes cutting our horses loose and scaring them off—as they had done several times before.

Our camping ground, we were afterward informed, had formerly been the camping ground of thousands of Indians, who, since the advent of the missions, had entirely disappeared from the face of the earth, but for perhaps a few scattered families that disease is hurrying to the grave. Nothing of their handiwork now remains — nothing to tell that they once lived and died.

Sixty miles with a wagon, over a road that is seldom travelled except with pack animals, is not always an enjoyable experience at the time. The road was alternately passing through some deep ravine, where pick and shovel were needed, or over the hard, level mesas, where progress — roads or no roads — is always a pleasure.

Most prominent in the vegetation for the first thirty miles were the endless variety of lichens on earth and pebble. Some were calcareous in character and proved identical with a species previously only recorded from the plains of Nebraska. The few stunted bushes of *Euphorbia misera* or *Æsculus Parryi* were often disguised beneath a load of foliaceous species of lichens — particularly with *Ramalina crinite* and species of *Roccella*.

Gradually the road led inland away from the sea cliffs, to a higher elevation. *Agave Shawii* then became characteristic, thousands of the dead plants, dried in rainless years of existence, concealed myriads of snails of a species that has a happy faculty of æstivation through months and even years of drouth. And well they need this faculty in this little belt, some two hundred miles broad, where the tropics divide from the temperate region. Some years the winter rains of California reach this section, and in summer the Sonoran summer rains deluge the country. But more often both the winter and summer rains neglect all but the elevated mountain ridge, leaving this but an arid, rainless desert.

Suddenly, without warning; the road leads up to the brink of a high cliff, down which it takes a straight course to the valley below. 'Tis the Rosaria valley, and a little beyond, having safely made the descent, we reach the low, plastered walls of the ex-mission. The quaint Spanish bells still hang as they did more than a century ago. The cheap painted images are occasionally honored by the scanty population of mixed races, but

on the whole there was little to interest one in the pueblo. The two mission bells were dated 1738 and 1800 respectively. The old Spaniard in charge of the mission ruins showed us some old Latin books. Some of the books we brought home with us were dated away back in the fourteenth century!

A camp beside the sandy creek was preferable to the flea-infested houses. A dime brought us a foaming pail of milk fresh from the cows—and a more pleased Indian boy could scarce be found beside!

The Oppopanax (*Acacia Farnesiana*) was found growing near, as I have since found it near every mission that I have visited. In endeavoring to cut down a tree we learned very effectually the strong, persistent quality of its perfume, which was fairly overwhelming.

Our dog found interesting sport at times chasing the festive coyote—and sometimes the dog was fairly ahead! He never had a chance to taste Master Coyote, however. A few quail and rabbits, aside from rattlesnakes and tarantulas, comprised all the game observed.

May day found us picking the fruits of the *Mamillaria* cactus, which in flavor strongly reminded me of the wild wood strawberries which I formerly sought in the Green mountain state.

But the water holes on the return trip were fast drying up. Feed was scarce at best, and our ponies were beginning to feel the effects of scant rations. So back we put to Uncle Samuel's ranch, over some four hundred miles of as rough wagon road as I ever hope to travel.

Up the Rosario valley we found the Giant Cactus (*Cereus Pringlei*) and one of the quaintest of curious plants that fantastic pen could describe. The cirio (*Fouquiera gigantea*) has been not inaptly compared to a huge inverted carrot, some thirty or forty feet high!

The wild bees gather sweetness amid its branches. The deer browse upon its leafless branches—leafless except in the rainy season. The twisting, smoke-like boughs waved us a weird farewell as we turned our faces reluctantly yet eagerly homeward.

A SOUTHERN CALIFORNIA CANYON.

Eastern readers are often puzzled by the meaning of the word canyon, the name being applied to narrow, shallow valleys, to gorges with deep precipitous walls, or to what in England would be called defiles. The mesa lands bordering the coast of Southern California are broad plains, deeply cut by narrow chasms that are always invisible to the eye until one stands upon their very brink. At the bottom of these canyons there is frequently, in springtime, a muddy little stream, but through the greater portion of the year only sand and water-worn pebbles and boulders mark their course. The mesas are densely covered with a growth of chaparral, brush composed largely of *adenostoma*, *rhus*, *ceanothus* and scrub-oak, but large areas are destitute of perennial vegetable growth, except for the occasional cactuses and undiscouraged forms of earth-lichens, which lend color to the landscape.

The canyons, too, are often densely wooded with impenetrable thickets of manzanita or other growth ranging about breast high, in which the rabbit and coyote once played hide and seek.

Among the foothills at the base of the Sierras there are larger and deeper canyons with perennial streams and a ranker growth of vegetation, often arborescent in character. In one of these I spent a few hours with a friend in the latter part of April, and while resting on one of the smoothly-worn boulders of a dry side-arroyo, I made a few notes which may be of interest to others.

THE TREE POPPY.—The canyon slopes for half a mile around me were covered with the brilliant lemon-yellow flowers and pale pea-green foliage of *Dendromecon rigidum*. The slender, leafy stem of this shrub bears its wealth of beauty at from two to six feet above the ground on a level with the surrounding chaparral. Its flowers are extremely delicate, two to four inches across, much resembling some forms of the *Eschscholtzia*. The pods burst at maturity, making the seed difficult to gather, so that this shrub has not yet found its way into general cultivation. It does not tranquilly bear transplanting in the way shrubs are usually handled.

THE YERBA SANTA.—A broad, sticky-leaved variety of *Eriodictyon glutinosum*, with large heliotrope-purple flowers, was a near neighbor of the *Dendromecon*. It was very different from

the narrow-leaved, white-flowered mountain form of the yerba santa, sometimes classed as *E. angustifolium*, more nearly resembling in aspect the Coast-valley form, formerly known as *E. tomentosum*, which has conspicuous broad, light-green, velvety foliage. At a distance an occasional mountain yucca, *Y. Whipplei*, with its magnificent candelabra-like panicle of creamy white flowers tinged with a rich maroon, lent a tropical appearance to the canyon slope.

THE BLUE CYPRESS.—With the exception of a few sycamores growing along the course of the clear mountain stream running very leisurely through the canyon at this season of the year, *Cupressus Gaudalupensis* formed the chief arboreal growth; but a disastrous forest fire swept over the mountains a few years ago, leaving only dead and blackened cypress skeletons, to which the very persistent cones cling with tenacity. Here and there a cypress thicket had escaped apparently unscathed, and formed a dark-green relief to the red, sun-baked earth so prevalent through this section of the state. The blue cypress rarely attains a height of over 30 feet, more often less than 20. Millions of young cypress trees have started up along the water-course in this canyon, with the evident aim to reforest the desolated slopes. Probably the seed had been retained in the cypress cones for years for just such an emergency as this, and the fire that destroyed the parent trees liberated it, thus indirectly repairing the injury done.

MIMULUS PUNICEUS.—Another elegant flowering shrub which never fails to excite admiration is the shrubby monkey-flower, with dark evergreen foliage and rich, brilliant, velvety crimson blossoms, borne in great profusion. It blooms when less than a foot high, and under favorable circumstances forms a wide-spreading bush six feet high, with slender, drooping branches. The flowers on one bush will occasionally vary from a shade of buff to a deep crimson—the usual normal color. A smaller species, *M. glutinosus*, bears larger, uniformly buff or salmon-colored flowers.

PICKERINGIA MONTANA.—Beside the mimulus in this canyon there grew a slender bush a few feet high, with light pea-green foliage. It was literally covered with small pea-shaped flowers of a dark, rich magenta color. As it is a peculiarly profuse bloomer, much might be expected from it in cultivation, but I

do not know of its having yet been introduced into gardens. The shrub was only from two to four feet high, and was most abundant on the dryest and rockiest ridges of the canyon slopes.

CHAMÆBATIA FOLIOLOSA.—A low, rosaceous shrub, at times scarcely a foot high, with delicately divided, fern-like foliage and white strawberry-like flowers, was found in considerable patches, almost monopolizing the ground where it grew. This shrub, *C. foliolosa*, might very appropriately be called the strawberry flowering bush, but has the far less pleasing common name of "tar-bush"—from what cause I know not.

FREMONTIA.—The crowning glory of the canyon at the time of my visit was the tangled jungle of *Fremontia Californica*, then in full bloom. It bordered the slow-running stream for miles, its beautiful wax-like yellow flowers giving occupation to millions of bees, and reminding one somewhat of abutilon blossoms. Even young plants of the *Fremontia* are tree-like in shape, and in cultivation it makes symmetrical flowering trees. It is also of comparatively quick growth, and the green leaves, tawny beneath, do not detract from its beauty. *Fremontia* is certainly destined to be one of the most popular flowering shrubs in California. A single tree growing in San Diego county invariably causes inquiry from every one interested in horticulture.

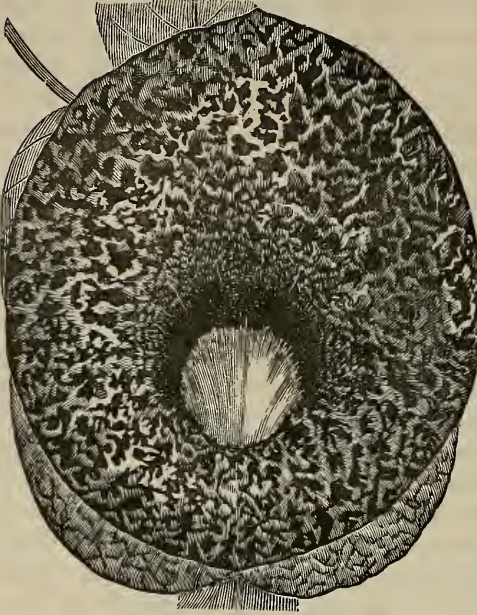
There was beauty enough in this Southern California canyon at the time of our visit to make us long to repeat it. The wild white sage, *Audibertia polystachia*, was just coming into bloom, and our last look backward showed glimpses of tall lilies growing beside the water and nodding us good-bye.

SOME GRACEFUL VINES AND CREEPERS

No single class of plants add more to the beauty of American homes than the many excellent climbers which everywhere adorn the home surroundings. Only a few of the more notable will here be mentioned.

DIOSCOREA BATATAS, the Cinnamon vine, is a beautiful tuberous rooted summer climber, with glossy foliage and fragrant flowers. The root is hardy with slight protection, but the vine dies down in the east.

ARISTOLOCHIA ELEGANS, here illustrated, though comparatively a new plant, has already become very popular for its



ARISTOLOCHIA ELEGANS.

oddity and beauty. A climber of rapid and dense growth, it produces a profusion of elegant flowers of a rich dark purple, ornamented throughout with irregular branching veining of a creamy white, the bright yellow center surrounded by rich velvety purple. It grows rapidly from seed, flowering the first year, and is an exceedingly attractive greenhouse plant for eastern homes, and useful in California for outside decoration.

A. GRANDIFLORA, the Pelican flower or Duck plant, bears flowers of a rich purple shading to black, with creamy lines and spots, which when fully expanded often measure twelve by eighteen inches, with a tail forty inches long, making a total length of five feet. It is considered of easy culture and ever-blooming in California.

TECOMA MACKENII is a rare African vine, found to thrive exceedingly well in California; it is of rapid growth, bearing lovely pale pink sprays of bloom, with evergreen foliage.

MINA LOBATA, another Mexican vine, with tricolored flowers (red, yellow and white) is all the rage in Europe, and is valued in American homes where its acquaintance has been formed. It is an annual especially adapted for covering trellises, arbors and fences, and if the seed is sown in March and planted out in May, will form a dense mass 20 feet high under favorable conditions.

THE CANARY-BIRD INDUSTRY.

The result of little things is strikingly illustrated in the canary-bird industry of Germany. Adopted without outward sign of co-operation by the poorer classes as a means of piecing out their scanty living, and conducted as an individual side line, a sort of unimportant auxiliary, it has grown to such proportions that it now stands third in money value among the articles exported from Hanover to the United States. For more than a century it has served as a means of existence to some of the poorest peasants, a source of comfort to others. But fifty years ago, when the dimensions of the enterprise had outgrown the capacity of the home market, the industry of today had birth.

Conducted wholly by the people whom poverty has relegated to the "lower classes," this branch of German commerce is pre-eminently a people's industry.

First the districts along the Rhine, then Belgium and Holland, St. Petersburg by carrier, and then about 1850 to New York the market grew and strengthened. Even South America and Australia have been reached, but so great has been the demand in the United States that most of the dealers have given our markets almost their exclusive attention.

To show the absolute necessity of some such enterprise I will cite a single case. A peasant near Fuhrberg, by dint of close application to his profession, succeeds in earning 33½c per day, or \$100 per year providing he can find work for 300 days in a year. Of this amount \$16.66 goes for rent, leaving but \$83.34 to support and clothe a family of six one year; and yet, he is better off than many, for he has a trade for which he commands better wages than unskilled labor. The canary-bird industry not

only assists in supporting the family, but adds to the pleasure instead of the care in its pursuance.

Harz Mountain appears to have originated the trade in times when the mountaineers, engaged chiefly in lumbering and mining, were reduced to the extremes of poverty. Every cottage had its breeding place for the birds, for which seed was easily obtainable in the summer. The birds were sold in the autumn. As this vicinity became a famous resort for the well-to-do and wealthy invalids on account of the pure air, the poverty of the natives was relieved and the canary-bird industry gradually declined, or rather shifted to Eichsfelde, a colony of poor weavers. At present only extra birds at fancy prices are obtainable at Harz Mountain. The business as applied to the inferior grades includes the poorer districts of Hesse, Luneburg Moor, parts of Westphalia, and among the Sudetic mountains in Saxony. In the more fruitful provinces the traffic is not carried on to any great extent. In the cities, however, in recent years large numbers have been raised by people who thus thoughtlessly deprive the poor peasant of a portion of his market. More than 250,000 birds are raised annually in Germany, of which about 100,000 go to the United States, 50,000 to England, and large numbers to Brazil, Chile, Argentine Republic and Australia. Most of the remainder (and this includes the higher-priced products of Harz mountain and the cream of the quality) are sold in Germany, where the highest prices are obtainable. The price obtainable for the ordinary male ranges from 3 to 4 marks, thus adding something like 1,000,000 marks to the wealth of Germany, most of which goes to the poorer class.

The growth of this enterprise is said to be due to two causes: first, the German bird dealers are very enterprising; sec-

ond, the German canary birds are the sweetest singers known. Beautiful birds are raised in England, known as the Norwich canary, but their song is much inferior to the genuine canary. Even greater inferiority is claimed of the birds reared in the United States from imported parents, due, it is said, to the warmer climate.

Nearly two-thirds of the 100,000 birds imported to this country pass through one man's hands, a resident of New York, who formerly lived in Germany, at Ahlfeld, in the province of Hanover. This man has a factory in the Harz district capable of producing material for 1000 cages per day. This is given the peasants to make up at home. From here the birds are shipped to New York in charge of skilled and careful attendants, one of which is given charge of about 1000 birds. One of these attendants is said to have crossed the ocean more than 100 times in care of birds, and there are something like thirty regular attendants. The New York house disposes of the little songsters in New Orleans, Charlestown, San Francisco, Canada, as well as other American cities. The attendants on their return voyage take back American birds and parrots, annually carrying into Germany something like 5000 redbirds, 3000 nonpareils, 2000 indigos, and 500 mockingbirds. Besides, they annually send to the European zoological gardens, from San Francisco, several sea lions, thus utilizing their time both ways in crossing the sea.

WILDER GRAHAME.

Edison's various inventions furnish employment to twenty thousand young women, and to eighty thousand men.

The average net profit per acre of the vineyards on the Rhine is estimated from official returns to be \$102.24 per annum for the past twenty-four years

THE CANTILLAS OF NORTHERN LOWER CALIFORNIA.

ALTHOUGH known to Cortes, who spent a million of dollars in its exploration in the fifteenth century, Baja California is still largely a "terra incognita." Possessing the disadvantages of Mexican rule, a formerly unpromising northern frontier and a barren coast, it offered few inducements for its exploration or the development of its agricultural and mineral wealth; yet travel in this strange land becomes irresistibly fascinating to the naturalist, as every step gives new forms of animal and vegetable life, till the productions of the temperate zone merge into those of the tropics about two hundred miles south of San Diego.

Nearly one hundred miles southeast of the city of San Diego lies the forest of Parry's graceful pinyon pine (*Pinus Parryana* Engelm.), bordered on the east by the broken peninsular range of mountains, consisting of gigantic masses of coarse granite devoid of vegetation other than the pretty *Ivesia Baileyi*, ornamenting the crevices of the rocks with its fern-like leaves, or occasional shrubs and trees that find a precarious existence in the scanty soil among the huge boulders and in the crevices of rocks, formed principally by the decomposing granite. These sierras were made famous with the surrounding region by the botanical collections of Dr. Edward Palmer in 1876 who called them the Cantillas—a name unrecognized by the Mexicans and Indians, who call them the Cantillas or Castillo Blanco—the "precipices" or the "white castle,"—and the great canyon at their base the "Canyono de la Bajada."

These mountains are situated about forty miles south of the United States boundary and sixty miles west of the Colorado river near its mouth. The approach from the boundary line at Campo

is over a natural wagon road: for thirty miles through a rolling country of a similar granitic formation, the soil largely composed of the decomposed granite. The sparse vegetation, mainly consisting of *Arctostaphylos*, *Adenostoma* and other similar shrubs, with now and then a small cluster of *Quercus agrifolia*, is similar to that of San Diego county; toward the end of the thirty miles, however, and for the remainder of the distance, stranger shrubs and trees make their appearance. Among others, *Quercus Palmeri*, *Q. pungens* and *Q. Emoryi* take the place of *Q. dumosa* (the common shrub oak of Southern California), and straggling bushes of *Juniperus Californicus* with *Pinus Parryana*, *Nolina Palmeri* (the sotole of this district) and many other less prominent plants, changes the aspect of the country on entering the region of the Cantillas.

The granitic rocky soil is here found overlying a strata of gold-bearing clay which yields to the patient miners of Indian, Greek, Spanish, English and American nationalities a scanty reward for their labor. Dozens of log huts have been erected throughout the forest, covered with shakes or thatched with *Nolina* leaves and plastered with mud, and hundreds of acres have been dug over, the miners digging large pits, five or more feet deep and eight or ten feet square, and often hauling the dirt several miles to water (or hauling the water to the dirt) to wash for the usually fine grains, though the gold is sometimes found in coarse grains or nuggets.

The forest of Parry's pinyone, occupying the stretch of table lands to the west of the Cantillas, extends northerly to the United States, a few trees straggling across the line, while on the east at the broken Cantillas it is abruptly displaced by *Pinus monophylla* that forms an extension of the pinyone forest to the hills bordering the desert, where it is more

exposed. These nearly related species are found side by side, yet neither species invades on the territory of the other.

On the north, Parry's pinyone extends to the higher table lands of Santa Catalina mountains of an altitude of 6,000 to 7,000 feet, where it is restricted to the rocky hills, the pinyos or "bull pine" (*P. Jeffreyi*) here forming a seemingly limitless forest.

One Indian employed as guide, calling himself Jose Capitan of the Picos (or in his own style Capitan "Jose Capitan Pico") and seemingly a permanent resident of the country, worked in the mines for 60 to 80c per day. The Indians met in 1883 called themselves "La Costas," and claimed to spend the winters on the shores of Todos Santos bay, where they are employed in getting abalones (*Haliotis*), moving to this region during the pinyone season, the pinyone nuts forming an important addition to their fare. Huge piles of alternate layers of the cones and pine branches are burned, when the seed is easily shaken out ready roasted for eating. Several of the Indians met later called themselves Maricopas, and were seen to depart for the Colorado river. A family of Cocopa Indians were found in the great canyon in 1883, but not seen later, who had not adopted the cast-off garments of civilization, as the other Indians had mostly done, but were in native dress. The costume of one of the La Costa Indians at Todos Santos bay has been described to me as consisting of a pair of red mittens!

The mescal plant (*Agave deserti*) forms an important article of food with the Indians, and the fiber of the leaves is utilized in making ropes, cord, sandals, and other things. The wild *Nicotiana* is used for tobacco; *Sambucus glauca* and *Mentha Canadense* furnishes their tea when they cannot buy the genuine; the beautiful golden lichen, *Evernia vulpina*, is

called as "good as sugar"; the seed of a species of *Mentzelia* and of *Echinocactus* are pronounced as "very good to eat" when made into flour and cooked, and the mesquite and tesoto beans are made of use for food. An occasional attempt is made at raising a few melons and a little corn by the Indians, but "Yankee fare" is preferred, naturally, to their own native productions, our sugar, salt and flour being fully appreciated.

In leaving the Parry's pinyone forest and entering the district of *Pinus monophylla*, a truly desert flora is met, other varieties of shrubs, cacti and brush generally abound, but *Rhus ovata*, Wats., *Arctostaphylos pungens* and a few others follow along the old Fort Yuma trail, besides the pretty *Loeselia*, *Frasera Parryi*, *Argemone hispida* and others abundant among the pinyones. But these disappear in descending several thousand feet into the great canyon which has yielded such a rich flora to the world. *Fouquiera splendens* stands guard along the trail, *Echinocactus cylindraceus* stands erect, five to seven feet high, and thousands of the "blue palm," with their glaucous green tops, dot the borders of the arroyo.

The beautiful "Chile de la agua" (*Palmerella debilis*, Gray) clusters around the single spring near the base of the trail, and a few ferns among the rocks, Parry's *Notholæna*, *Venus-hair* and a *Woodsia*, form exceptions to the characteristically spiny plants.

The sides of the canyon are mostly of granite, containing quantities of black and white mica, garnets, tourmaline, feldspar, with occasional stratas of slate, usually perpendicular. A white rattlesnake, about the color of the dark granite, was seen on the desert, but animal life is scarce excepting a great variety of insects and lizards.

A *Succinea*, *Vertigo ovata*, *Planorbis parvus*, *Physa* and *Limax* sp. completes

the list of the known desert mollusks, two of them distributed over the whole United States and perhaps a third also.

A curious thing was noticed where the clay from the gold washings had settled in the holes, not forming level layers on the bottom only, but instead settling on the sides as well, and forming thick and unequal layers. These remarkable formations of strata were often exposed by other washings, showing the irregularly curved and distinctly marked stratas of clay (with other dirt), unequal in thickness. The holes may have been made by horses after the deposit, the layers bending under the weight, as they were unbroken.

C. R. ORCUTT.

LOVE EXPRESSED.

So sweet, within my arms to hold,
A baby fresh from heaven,
And wrap it round with love fourfold,
Ere it a smile has given.

So sweet, its presence warm to feel,
Just breathing on my breast,
I must in spirit thankful kneel
To God, for love expressed.

E. E.

San Diego, Cal., Aug. 19, 1893.

A florist of Clifton, O., recently brought suit and recovered a verdict of \$4000 against the village for failing to furnish him a supply of water during the water famine. The Circuit Court reversed the decision later.

The Parasol or leaf-cutting ant, of tropical America, has proved so destructive to vegetation as to cause legislation in Trinidad against the pest. The ant cuts up the leaves of plants and carries to its nest, and uses them to form an underground "mushroom" bed. The Kew Bulletin for June gives some interesting notes and references respecting this insect.

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The Press Claims Company devotes much attention to patents. It has handled thousands of applications for inventions, but it would like to handle thousands more. There is plenty of inventive talent at large in this country, needing nothing but encouragement to produce practical results. That encouragement the Press Claims Company proposes to give.

NOT SO HARD AS IT SEEMS.

A patent strikes most people as an appallingly formidable thing. The idea is that an inventor must be a natural genius, like Edison or Bell; that he must devote years to delving in complicated mechanical problems and that he must spend a fortune on delicate experiments before he can get a new device to a patentable degree of perfection. This delusion the company desires to dispel. It desires to get into the head of the public a clear comprehension of the fact that it is not the great, complex, and expensive inventions that bring the best returns to their authors, but the little, simple, and cheap ones—the things that seem so absurdly trivial that the average citizen would feel somewhat ashamed of bringing them to the attention of the Patent Office.

Edison says that the profits he has received from the patents on all his marvelous inventions have not been sufficient to pay the cost of his experiments. But the man who conceived the idea of fastening a bit of rubber cord to a child's ball, so that it would come back to the hand when thrown, made a fortune out of his scheme. The modern sewing-machine is a miracle of ingenuity—the product of the toil of hundreds of busy brains through a hundred and fifty years, but the whole brilliant result rests upon the

simple device of putting the eye of the needle at the point instead of at the other end.

THE LITTLE THINGS THE MOST VALUABLE.

Comparatively few people regard themselves as inventors, but almost everybody has been struck, at one time or another, with ideas that seemed calculated to reduce some of the little frictions of life. Usually such ideas are dismissed without further thought.

"Why don't the railroad company make its car windows so that they can be slid up and down without breaking the passengers' backs?" exclaims the traveler. "If I were running the road I would make them in such a way."

"What was the man that made this saucepan thinking of?" grumbles the cook. "He never had to work over a stove, or he would have known how it ought to have been fixed."

"Hang such a collar button!" growls the man who is late for breakfast. "If I were in the business I'd make buttons that wouldn't slip out, or break off, or gouge out the back of my neck."

And then the various sufferers forget about their grievances and begin to think of something else. If they would sit down at the next convenient opportunity, put their ideas about car windows, saucepans, and collar buttons into practical shape, and then apply for patents, they might find themselves as independently wealthy as the man who invented the iron umbrella ring, or the one who patented the fifteen puzzle.

A TEMPTING OFFER.

To induce people to keep track of their bright ideas and see what there is in them, the Press Claims Company has resolved to offer a prize.

To the person who submits to it the simplest and most promising invention, from a commercial point of view, the company will give twenty-five hundred dollars in cash, in addition to refunding the fees for securing the patent.

It will also advertise the invention free of charge.

This offer is subject to the following conditions:

Every competitor must obtain a patent for his invention through the company. He must first apply for a preliminary search, the cost of which will be five dollars. Should this search show his invention to be unpatentable, he can withdraw without further expense. Otherwise he will be expected to complete his application

and take out a patent in the regular way. The total expense, including Government and Bureau fees, will be seventy dollars. For this, whether he secures the prize or not, the inventor will have a patent that ought to be a valuable property to him. The prize will be awarded by a jury consisting of three reputable patent attorneys of Washington. Intending competitors should fill out the following blank, and forward it with their application:

"_____, _____, 1893.

"I submit the within described invention in competition for the Twenty-five hundred Dollar Prize offered by the Press Claims Company.

"_____, _____."

NO BLANKS IN THIS COMPETITION.

This is a competition of rather an unusual nature. It is common to offer prizes for the best story, or picture, or architectural plan, all the competitors risking the loss of their labor and the successful one merely selling his for the amount of the prize. But the Press Claims Company's offer is something entirely different. Each person is asked merely to help himself, and the one who helps himself to the best advantage is to be rewarded for doing it. The prize is only a stimulus to do something that would be well worth doing without it. The architect whose competitive plan for a club house on a certain corner is not accepted has spent his labor on something of very little use to him. But the person who patents a simple and useful device in the Press Claims Company's competition, need not worry if he fail to secure the prize. He has a substantial result to show for his work—one that will command its value in the market at any time.

The plain man who uses any article in his daily work ought to know better how to improve it than the mechanical expert who studies it only from the theoretical point of view. Get rid of the idea that an improvement can be too simple to be worth patenting. The simpler the better. The person who best succeeds in combining simplicity and popularity, will get the Press Claims Company's twenty-five hundred dollars.

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